

Appln No. 10/080,818
Amdt date March 15, 2006
Reply to Office action of November 21, 2005

REMARKS/ARGUMENTS

Pending Claims:

Claims 1-3, 5-12, 14-17, 19 and 20 are pending herein, with claims 2, 10, 19 and 20 being amended. Claims 4, 13, and 18 were previously canceled.

Rejection of the Claims under 35 U.S.C. 103(a):

At Items 2-5, the Examiner rejects claims 1, 4, 5, 8, 9, 12-14, 17, 19 and 20 under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (APA) in view of U.S. Patent No. 5,561,886 to Flamme in view of U.S. Patent No. 5,774,938 to Kent. Applicant notes that since claims 4 and 13 were previously deleted, the rejection of these claims is moot.

The Examiner states that APA discloses a barrel hinge comprising a cylindrical female barrel portion 4b having an axial bore extending from end to end, and first and second male barrel portions 4a, 4c having cylindrical main bodies. APA also discloses the female barrel portion comprises seamless cylindrical tubing. Furthermore, APA discloses the male and female barrel portions are adapted to be welded to objects. The Examiner notes that APA does not disclose the male barrel portions as having a pin extension or the female barrel portion as including an aperture for a lubricant fitting.

The Examiner states that Flamme discloses a cylindrical female barrel portion (20) and first and second cylindrical male barrel portions (11, 12). The female barrel portion has a sidewall (21), outside surface, axial bore, and interior wall surface while the male barrel portions have a main body portion (25), outer surface, pin extensions (13), and pin ends (13) substantially as claimed. The two male portions are identical and are rotatably received in the female portion. Flamme uses this arrangement to provide for easy assembly and mounting of a door on a body via the hinge column. The Examiner states that it would have been obvious to one having ordinary skill in the art to modify APA as taught by Flamme, in order to provide a hinge that allows for easy mounting and assembly of a door on body, via the hinge. The Examiner states that this combination would result in the pin (6) of APA being replaced with the pair of pins (13 and 14) of Flamme. The Examiner further notes that because pin extensions 3 and 15 function

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with the male barrel portions as a single unit, the pin extensions are considered to be unitary with the barrel portions.

Applicant has carefully studied the Flamme reference and respectfully submits that it discloses a completely different structure designed for screw on application, which is completely different than the weld on application of the APA. The hinge of Flamme is a separatable hinge designed to be quickly detached from a switch cabinet or instrument cabinet door. On the other hand, the APA is a permanently mounted hinge which is directly welded to the pieces to be hinged together and is not intended to ever be separated. In the Flamme application, the hinge band (22) is continuous with the hinge hole (21). This hinge part (20) is fixed to the door by the hinge band (22). (See column 3, lines 54-56.) The two male portions (11 and 12) are likewise not welded to the frame but are instead held to the door frame by mounting flanges (15 and 16), which are connected to a sleeve-like receptacles (25 and 26) which are fitted with hinge pins (13 and 14).

The Examiner's statement that "it would have been obvious to one having ordinary skill in the art at the time of the invention to modify APA as taught by Flamme, in order to provide a hinge that allows for easy mounting and assembly of a door on body, via the hinge", is simply not correct. The point of Flamme is to provide a separatable hinge while the APA is designed as a weld on hinge that is not separatable. Therefore, one having ordinary skill in the art would find no motivation to combine these two references. Also, with respect to the Examiner's statement that the combination would result in the pin (6) of APA being replaced with the pair of pins (13 and 14) of Flamme, once again, Flamme would not provide any motivation for this since the APA is directed to a hinge that once assembled and attached to parts to be hinged together, is not intended to be removed.

With respect to Kent et al., the Examiner notes that it teaches a female portion (10) with an aperture for a lubricant fitting 58 for the purpose of providing the interior space of the cylindrical portion of the hinge with grease. Accurately pointed out is the fact that grease protects various assemblies from outside contamination. The Examiner states that it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate

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a lubricant fitting in an aperture of Flamme's female member in order for the hinge to retain lubrication, which protects the assembly from outside contaminates. Applicant respectfully disagrees that the teaching of Kent et al. would be obvious to one having ordinary skill in the art of weld-on hinges. Kent et al. is directed to a very specialized locking device for locking a closure in an open position which is used for critical usages, such as an emergency release hatch for emergency door exits for school buses and the like. These style of hinges may never actually have to be used, but must be ready for a user to detach a door from a hinge in an emergency situation where the door will not open, but must be removed for ingress and/or egress from the vehicle.

The criticality of incorporating a lubricating device is thus apparent in Kent et al. In contrast with Kent, is the more mundane purposes of the weld-on hinge of the APA, which is designed to prevent any detachment of a door from its frame. As such, one having ordinary skill in the art of weld-on hinges would have no motivation to supply a lubrication fitting to APA. Furthermore, as shown in the drawings of Flamme, the male pins (13 and 14) of the male barrel portion barely enter the two opposite ends of the elongate female portion (20). Therefore, even if a grease fitting was placed on the female portion (20), a very large volume of grease would need to be injected into the hole (21) in order for lubrication to be provided to the pins (13 and 14) located at the ends thereof.

Moreover, unlike the situation of Kent et al., where lubrication is deemed necessary to separate the two parts of the hinge to provide for emergency release, in the case of a Flamme hinge, it is not used for such emergency purposes and furthermore, the male portions can be separated from the female portions by unscrewing the male portions and sliding them apart from the female portion. One having ordinary skill in the art would find no motivation to combine the references because there is no need for lubrication in a hinge design such as in Flamme.

Accordingly, Applicant respectfully submits that the claimed subject matter of independent claims 1, 9 and 17 would not be combined by one having ordinary skill in the art. Therefore, these claims, and all claims dependent thereon, should be allowed. Applicant would point out that claim 4 was deleted in the prior amendment so the rejection of this claim is moot.

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The Examiner at Item 6 refers to claims 18 and 19. Again, Applicant would point out that claim 18 was cancelled in the prior Office action. With respect to the Examiner's rejection of claim 19, however, the Examiner states that Flamme discloses the main body portion of each male portion and female portion to be completely cylindrical (each body portion of Flamme contains a complete cylinder) and that the portions are adapted for welding to objects. The Examiner further asserts that the flange portions can be welded to an object.

Applicant respectfully disagrees with this assertion. One advantage of the use of cylindrical male and female hinge parts of the instant invention is so that no matter the orientation of the parts, they can be welded to the objects to be hinged together. On the other hand, in Flamme, the male and female parts have specific portions that are designed to be attached to the cabinet door and frame thereof. If one were to attempt to weld the cylindrical hinge parts directly to either the cabinet door or frame, this would prevent the parts from being separated. For example, if the male part and/or the female part were welded directly to the frame and/or door, this would make it very difficult to slide the door and frame parts together. It should be kept in mind that the purpose of Flamme is to provide separatable hinges. If the male parts were welded to the frame or door, the hinge would not be separatable and the claimed function of Flamme would be destroyed, providing a further motivation not to combine.

Next, in Items 7 and 8, the Examiner rejects claims 3 and 11 under 35 U.S.C. 103(a) as being unpatentable over APA in view of Flamme and Kent as applied to claim 1 and further in view of U.S. Patent No. 5,771,538 to Huppert, Sr. The Examiner states that the combination of APA, Flamme and Kent fail to disclose the lubricant fitting as threadably engageable with the female barrel portion, but note that Huppert teaches a lubricant fitting (16) which is threadably engaged with the barrel portion (14). The Examiner states it would have been obvious to one having ordinary skill in the art at the time the invention was made to fasten the lubricant fitting with threads to the female barrel portion so that one can readily remove the grease fitting without the lubricant fitting falling off. Applicant would respectfully submit that for the same reasons that the basic invention of independent claims 1 and 9 is not obvious over APA in view of Flamme and Kent et al., claims 3 and 11 should be allowable as well.

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Referring to Items 9 and 10, the Examiner rejects claims 2 and 10 under 35 U.S.C. as being unpatentable over APA in view of Flamme and Kent as applied to claim 1, and further in view of U.S. Patent No.132,147 to Dodge. The Examiner states that Dodge teaches the ends of female barrel portions are beveled as the main portions of the male portions are also beveled so that when the portions are connected together the joint is so closed as to exclude rain and dust which would otherwise get into the socket and displace the lubricant and wear away the surfaces. Applicant respectfully submits that the beveling in Dodge is of a completely different kind than the beveling referred to in claims 2 and 10. In claims 2 and 10, the bevels result in a groove being formed around the contact area between the ends of the female barrel portion and the portion of the male barrel portions which contact the female barrel portion. As a result, even if the structure which the barrel hinge is welded is painted over, because of the groove, there is less likelihood that paint around the intersections between the male and the female portions will disrupt the smooth operation of the hinge. In the case of Dodge, the bottom end of the pin of the male portion of the hinge is beveled, and is inserted into a hole in the female portion of the hinge that is also beveled. The Dodge patent refers to user placing oil in the well shaped openings formed in the female portions of the hinge so that when the male portions of the pins are inserted therein, oil will lubricate the movement of the male portion and the female portion supplying smooth operation of the hinge. Thus, the Dodge reference does not disclose the bevel structure claimed in claims 2 and 10. Accordingly, this ground of rejection is traversed.

Lastly, at Items 11 and 12, the Examiner rejects claims 6, 7, 15 and 16 as being unpatentable over APA in view of Flamme and Kent as applied to claim 1 and further in view of U.S. Patent No. 470,514 to Simpson. Simpson discloses a lightning conductor, having three pieces A, B and C that are immovably connected together. The Examiner states that Flamme discloses a pin extension of the male portions as machined at one end thereof but fails to disclose using bar stock or tubing stock to make the male barrel portions as claimed. Applicant respectfully disagrees that Simpson discloses male portions A and B constructed from bar or tubing stock. What Simpson does disclose is a separate short section of pipe C which is of such a diameter as to closely fit in within meeting sections A & B. The sections A, B are then

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indented (as shown at D) which indentations secure the sections A, B and C firmly together. See lines 27-32. Thus, it is clear from the drawings of Simpson and the specification that the so-called male portions actually comprises a narrow diameter section of pipe which is inserted into a wider diameter section of pipe with indents holding the narrow section of pipe C in the wider diameter pipe B. Accordingly, Simpson does not teach the features of 6, 7, 15 or 16.

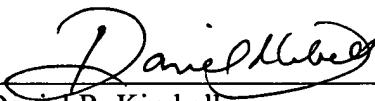
Furthermore, inasmuch as the basic references of APA in view of Flamme and Kent fail to disclose subject matter of claims 1 or 9, claims 6, 7, 15 and 16 dependent thereon are also not obvious.

Turning lastly to Items 13-15, the Examiner addressed Applicant's prior arguments, and states that there is a motivation to combine Kent with Flamme. The Examiner states that Kent explicitly provides reasoning for including a lubricant fitting on the hinge at col. 11, line 57 to col. 12, line 3. Applicant does not argue that Kent et al. fails to provide a grease fitting on its own device. This has been discussed above. Kent et al. discloses a locking device for locking a closure in an open position used for emergency purposes, where if the feature needs to be used, it must be assured to work and therefore lubrication to prevent seizing up of the parts is highly desirable. However, in the case of weld-on barrel hinges, this has not been regarded as an issue since the hinge parts are not intended to ever be taken apart. Lastly, as the Examiner can see, claims 2 and 10 have been amended to clarify the nature of the bevels and recite that a groove is formed in the interface region of the bevels.

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Applicant therefore respectfully solicits reconsideration of this rejection and prompt allowance of the claims. If the Examiner has any alternate suggestions, a telephone call to the undersigned would be appreciated.

Respectfully submitted,
CHRISTIE, PARKER & HALE, LLP

By 

Daniel R. Kimbell
Reg. No. 34,849
626/795-9900

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